

PATENT COOPERATION TREATY

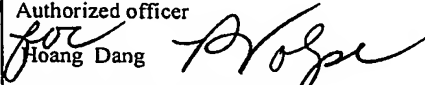
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference 25791.110.02 | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/US03/20694 | International filing date (day/month/year) 01 July 2003 (01.07.2003) | Priority date (day/month/year) 24 July 2002 (24.07.2002) |
| International Patent Classification (IPC) or national classification and IPC IPC(7): E21B 19/16 and US Cl.: 166/380, 85.3, 309, 387, 72, 73, 187, 195, 206, 207, 212, 216, 217; 285/382.7, 398, 55, 388.1 | | |
| Applicant ENVENTURE GLOBAL TECHNOLOGY | | |
| <p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>18</u> sheets.</p> | | |
| <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability IV <input checked="" type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application | | |
| Date of submission of the demand 02 February 2004 (02.02.2004) | | Date of completion of this report 06 September 2004 (06.09.2004) |
| Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230 | | Authorized officer  Hoang Dang Telephone No. 703-308-2168 |

I. Basis of the report**1. With regard to the elements of the international application:***

- ☐ the international application as originally filed.
- ☒ the description:
pages 1-63 as originally filed
pages NONE filed with the demand
pages NONE filed with the letter of _____
- ☒ the claims:
pages 64-69 as originally filed
pages NONE as amended (together with any statement) under Article 19
pages 70-87 filed with the demand
pages NONE filed with the letter of _____
- ☒ the drawings:
pages 1-80 as originally filed
pages NONE filed with the demand
pages NONE filed with the letter of _____
- ☐ the sequence listing part of the description:
pages NONE as originally filed
pages NONE filed with the demand
pages NONE filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages NONE
- ☐ the claims, Nos. NONE
- ☐ the drawings, sheets/fig NONE

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/20694

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☒ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention is accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

Please See Continuation Sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-66, 124-127 and 145-170

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/20694

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

| | | |
|-------------------------------|---|-----|
| Novelty (N) | Claims <u>1-66, 124-127 and 145-170</u> | YES |
| | Claims <u>NONE</u> | NO |
| Inventive Step (IS) | Claims <u>1-66, 124-127 and 145-170</u> | YES |
| | Claims <u>NONE</u> | NO |
| Industrial Applicability (IA) | Claims <u>1-66, 124-127 and 145-170</u> | YES |
| | Claims <u>NONE</u> | NO |

2. CITATIONS AND EXPLANATIONS

Claims 1-66, 124-127 and 145-170 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a method including the steps as claimed and wherein the first tubular member and the second tubular member are radially expanded and plastically deformed after they are coupled together and to the opposite ends of the tubular sleeve. As for apparatus claims 65, 66, 124-127, 159-162, 169 and 170, the prior art does not teach or fairly suggest an apparatus as claimed and wherein the tubular sleeve, end portion of the first tubular member and end portion of the second tubular member are in circumferential tension or compression as recited.

Claims 1-66, 124-127 and 145-170 meet the criteria set out in PCT Article 33(4), and thus the apparatus or method as claimed has industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

IV. 3. This Authority considers that the requirement of unity of invention is accordance with Rules 13.1, 13.2 and 13.3 is not complied with for the following reasons:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-66, 124-127 and 145-170, drawn to a method or an apparatus.

Group II, claim(s) 67-75, drawn to an apparatus.

Group III, claim(s) 76-84, drawn to an apparatus.

Group IV, claim(s) 85, drawn to an apparatus.

Group V, claim(s) 86-91, 95-103, drawn to an apparatus.

Group VI, claim(s) 92-94, drawn to an apparatus.

Group VII, claim(s) 104-107, drawn to an apparatus.

Group VIII, claim(s) 108, drawn to an apparatus.

Group IX, claim(s) 109, drawn to an apparatus.

Group X, claim(s) 110, drawn to an apparatus.

Group XI, claim(s) 111, drawn to an apparatus.

Group XII, claim(s) 112, drawn to an apparatus.

Group XIII, claim(s) 113, drawn to an apparatus.

Group XIV, claim(s) 114-115, drawn to an apparatus.

Group XV, claim(s) 116, drawn to an apparatus.

Group XVI, claim(s) 117, drawn to an apparatus.

Group XVII, claim(s) 118-119, drawn to an apparatus.

Group XVIII, claim(s) 120-123, drawn to an apparatus.

Group XIX, claim(s) 128-141, drawn to a method of extracting geothermal

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

energy form a subterranean source of geothermal energy.

Group XX, claim(s) 142-144, drawn to a method.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of the claims of Group I is the expanding and plastically deforming the first tubular member and the second tubular member or/and tubular sleeve.

The special technical feature of the claims of Group II is the internal flange.

The special technical feature of the claims of Group III is the external flange.

The special technical feature of the claims of Group IV is the sealing member(s) between the tubular sleeve and the tubular member(s).

The special technical feature of the claims of Group V is the retaining ring(s) between the tubular member(s) and tubular sleeve.

The special technical feature of the claims of Group VI is the end of the tubular sleeve is deformed onto the tubular member(s).

The special technical feature of the claims of Group VII is the structure whose interior surface is contacted by the tubular sleeve.

The special technical feature of the claims of Group VIII is the sealing element coupled to the exterior surface of the tubular sleeve.

The special technical feature of the claims of Group IX is the metallic sleeve.

The special technical feature of the claims of Group X is the non-metallic sleeve.

The special technical feature of the claims of Group XI is the plastic sleeve.

The special technical feature of the claims of Group XII is the ceramic sleeve.

The special technical feature of the claims of Group XIII is the frangible sleeve.

The special technical feature of the claims of Group XIV is the longitudinal slot(s) or radial passage(s).

The special technical feature of the claims of Group XV is the amorphously bond between first and second tubular members.

The special technical feature of the claims of Group XVI is the welding between first and second tubular members.

The special technical feature of the claims of Group XVII is the only portions of the first and second tubular members adjacent the tubular sleeve are deformed.

The special technical feature of the claims of Group XVIII is the threads on the first and second tubular members.

The special technical feature of the claims of Group XIX is the step of radially expanding and plastically deforming the second casing string within the borehole.

The special technical feature of the claims of Group XX is the step of determining if a predetermined amount of the pressurized fluid leaks through the coupled ends of the first and second tubular members.

The unity between Groups I-XX is lacking since each Group relies on a different special technical feature as explained above.